

AMENDMENTS TO THE ABSTRACT:

Please amend the Abstract as follows:

ABSTRACT

~~AN OPTICAL WAVEGUIDE STRUCTURE~~

A waveguide structure according to the invention comprises a core layer (10), having a refractive index n_{core} , and an array of rods (11) in the core layer having a refractive index n_{rods} . The refractive indices satisfy the inequality: $n_{\text{rods}} > n_{\text{core}}$. In a planar waveguide structure buffer (12) and cladding (13) layers are included, having a refractive index n_{buffer} and n_{cladding} respectively. The refractive indices then satisfy the inequality: $n_{\text{rods}} > n_{\text{core}} > n_{\text{cladding}}$ and n_{buffer} . This condition provides greater vertical confinement of the E-field of an optical signal passing through the waveguide. Furthermore, it allows waveguides to be formed of a glassy material having a similar refractive index and core dimensions to that of a fibre. A high refractive index contrast within the photonic crystal region is used while totally eliminating the need for mode conversion to launch light in and out of the waveguide.

(Figure 2)